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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,593	11/20/2001	Jun Ikeda	M2047-31	1532

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EXAMINER
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LAO, LUN YI

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/989,593

**Applicant(s)**

IKEDA ET AL.

**Examiner**

Lao Y Lun

**Art Unit**

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 9, 11, 18-19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barkans et al(5,649,083) in view of Masterson(5,469,190).

As to claims 1, 9, 11, 18-19 and 22, Barkans et al teach a display device comprising a pseudo-tone processing means(14) for receiving inputs of display data and for color-reducing each RGB component of the display data by pseudo-tone processing to produce color-reduced display data(e.g. for reducing 24 bits to 12 bits or 8 bits (see figure 1 and column 1, lines 28-65); a frame memory(16) for storing the color-reduced data; a conversion table(19r, 19g, 19b); a tone correction means(19r, 19g, 19b) and a drive means(24) for driving said display device(see figure 1; column 1, lines 66-67 and column 2, lines 1-14).

Barkans et al fail a conversion table(19r, 19g, 19b) is one dimensional.

Masterson teaches a display device a one dimensional conversion circuit(22)(see figures 4, 6; column 4, lines 54-60 and column 6, lines 10-34). It would have been obvious to have modified Barkans et al with the teaching of Masterson, so it is not only

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reduce the size of the memory, but also allow very accurate emulation of the colors without slowing the operation(see column 6, lines 25-34).

3. Claims 2, 10, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barkans in view of Masterson and Friedman et al(5,394,518).

As to claims 2, 10, 20 and 21, Barkans as modified fail to disclose the reduction RGB components is G component > R component > B component.

Friedman et al teach a display device comprising G component(6 bits) > R component(5 bits) > B component(4 bits)(see column 15, lines 5-10). It would have been obvious to have modified Barkans as modified with the teaching of Friedman et al, since a human's eye is more sensitive to the change in the intensity of a green color than a blue color or red color (see Friedman's column 15, lines 15-21).

4. Claims 3, 5, 7, 13, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Barkans et al in view of Masterson(5,469,190) and Cowlshaw(4,725,828).

As to claims 3, 5, 7, 13, 15 and 17, Barkans et al as modified fail to disclose the tone number of the G component after color reduction is from about two to about 20 times the tone number of the B component and R:G:B=2:4:1 or R:G:B=16:32:8.

Cowlshaw the tone number of the G component after color reduction is from about two to about 20 times the tone number of the B component and R:G:B=2:4:1 or R:G:B=16(2<sup>4</sup>):32(2<sup>5</sup>):8(2<sup>3</sup>)(5 bits for Green, 4 bits for Red and 3 bits for Blue)(see figure 4; column 2, lines 6-16 and column 6, lines 22-42). It would have been obvious to have modified Barkans et al as modified with the teaching of Cowlshaw, since Cowlshaw

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discloses since a human's eye is more sensitive to the change in the intensity of a green color than a blue color or red color (see column 5, lines 24-30) and the bit number of RGB data and the ratio of the RGB data would be changed(see column 2, lines 6-16 and column 6, lines 22-42).

5. Claims 4, 6, 8, 12, 14 and 16 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Barkans in view of Masterson, Friedman et al(5,394,518) and Cowlshaw(4,725,828).

As to claims 4, 6, 8, 12, 14 and 16, Barkans et al as modified fail to disclose the tone number of the G component after color reduction is from about two to about 20 times the tone number of the B component and R:G:B=2:4:1 or R:G:B=16:32:8.

See the discussion of Cowlshaw above.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lucas et al(5,081,450) teach a display device comprising a encoder(13), a frame memory(14), a decoder(15) and a driver(16).

Edelson et al(5,065,144) teach a display device having an encoder(12, display memory(16), a decoder(38) and a gamma correction circuit(24).

Lee(6,654,026) teaches a display device having a first conversion circuit(51), a storage(53), a second conversion circuit(54) and a display(90).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi, Lao whose telephone number is (703) 305-4873.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached at (703) 305-4938.

Any response to this action should be mailed to:

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Commissioner of Patents and Trademarks

Washington, D.C. 20231

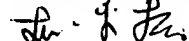
or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or  
proceeding should be directed to the Technology Center 2600 Customer Service Office  
whose telephone number is (703) 306-0377.

January 5, 2005

  
**Lun-yi Lao**

**Primary Examiner**